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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/442,568 11/18/99 DIMEO

F 401

EXAMINER

MMC2/0705

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DANBURY CT 06810

PHAM, H

ART UNIT

PAPER NUMBER

2877

DATE MAILED:

07/05/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/442,568

Applicant(s)

DIMEO ET AL.

Examiner

Hoa Q. Pham

Art Unit

2877

-- Th MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 April 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 30-45 is/are allowed.
- 6) ☒ Claim(s) 1-29 and 46-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

- 15) ☐ Notice of References Cited (PTO-892)
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 18) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "**optical waveguide**" in claim 18-20, "**a plurality of light sources and detectors**" in claims 23, 26, 27, 30, 33, and 34, and "**a thermal energy source**" in claim 30 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-5, 7-14, 18-21, 25-28, 46, 48-50, 53, 55, and 62 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ito et al (4,661,320).

Regarding claims 1, 21, 30, 45, 46; Ito et al discloses a light source (5), detector (6) and an optical barrier (1) therebetween, wherein the optical barrier response to the presence of the hydrogen by responsively changing from a first optical state to a different second state to indicate the presence of hydrogen gas in the gaseous environment. See figure 1 and column 3 line 64 through column 4 line 13.

Regarding claim 2, Ito et al teaches that the optical barrier (1) will block the transmitted light according to the density of the gas (column 4 lines 3-13).

Regarding claims 3-4; Ito et al teaches in the normal state, the transmitted light is received by the detector (6) (column 3 line 64 through column 4 line 2).

Regarding claim 5, Ito et al teaches that the device (1) is made of catalytic metal (2) (column 3 lines 1-2).

Regarding claims 7-9, Ito et al teaches that protective film comprises a palladium film (column 3 lines 19-20).

Regarding claims 10, 25, see figure 4 for unitary portable article.

Regarding claims 11 and 12, see figure 1 for power source (7).

Regarding claims 13-14, see column 2 lines 65-68 for giving an alarm signal based on the amount of transmitted light.

Regarding claims 18-20, see figures 4, 6, and 7 for optical waveguide.

Regarding claims 26-28, see figures 9-12 for a plurality of light sources, barriers, and detectors.

Regarding claims 53, 55 and 62, Ito et al teaches that the thin film is overlaid by palladium (Pd), platinum (Pt), etc... (column 3 line 11).

Regarding claims 47-49, see column 3 lines 16-27 for deposition method.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6, 15-17, 22-24, 29, 47, 51-52, 54, 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al in view of Griessen et al (Journal of Alloys and Compounds, vol. 153-154 (1997)).

Regarding claims 6, 29, 51, 52, 56-61; Ito et al does not explicitly teach that the barrier comprises yttrium thin film, trivalent rare earth metals, etc...; however, such a feature is known in the art as taught by Griessen et al. Griessen et al (of record) teaches that the hydrogen can be determined on the switchable optical properties of Yttrium and lanthanum hydride films. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the barrier of Ito et al by a Yttrium and lathanum hydride films of Griessen et al for the same purpose of determining the presence of hydrogen gas in a gaseous environment.

Regarding claims 15-17, 22-24, and 47; Ito teaches the use of a light emitting diode and does not teach that the light source could be an incandescent lamp, light bulb; however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the light source of Ito et al by a lamp because the device would function in the same manner whether the light source is a LED or a lamp.

Regarding claim 54; it is well known in the art that a hyrogen-pereable material is doped with a dopant such as Mg, Al, Ca, etc... to form a rare earth metal device.

Allowabl Subject Matter

6. Claims 30-45 are allowed.

Response to Arguments

7. Applicant's arguments filed 4/23/01 have been fully considered but they are not persuasive.

a. Applicant's remarks, pages 4-5, argue that additional drawings are not necessary for purpose of understanding such claimed features under the provisions of 37 C.F.R 1.83. Examiner is disagreed because the objected features above (i.e., a thermal energy source) are not conventional features disclosed in the specification and claims. Thus, the claims must show every features of the invention specified in the claims.

b. Applicant's remarks, pages 6-9, argue that the references do not teach a source of thermal energy for heating the Rare Earth Metal Film. The argument is not deemed to be persuasive because the claimed invention is read on the teachings of Ito. The claimed invention recites **"a light/heat source"** and Ito discloses **a light source 5 (figure 1) which considered to be the same because any light source can have both function of heating and lighting**. Thus, light source 5 of Ito can be considered as **"a light/heat source"** and nowhere in the claims teach that both source of luminescent and source of thermal energy are separately disclosed.

In view of the foregoing, it is believed that the present claim language still read on the teachings of Ito and Griessen.

Conclusion

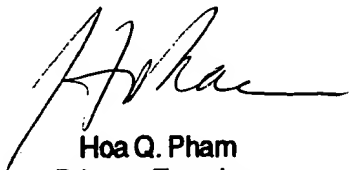
8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Hoa Pham whose telephone number is (703) 308-4808. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pham/hp
July 03, 2001


Hoa Q. Pham
Primary Examiner